



NEW SHEET 1

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FIG. 31

- 123 Average the voltage or current of at least a portion of a first cycle of an AC power signal
- 124 Average the voltage or current of a similar portion of a second cycle of said AC power signal
- 125 Calculate an adjustment factor based on the averaging of said at least portions of said first and second cycles, said adjustment factor having a value to compensate for changes in the amplitude between the first and second cycle portions
- 126 Apply said adjustment factor to said second cycle portion to form an adjusted second cycle portion
- 127 Compare said first cycle portion to said adjusted second cycle portion to determine if there is an arcing signal on said AC power signal
- 128 Activate an arcing alarm if a dangerous arcing signal is found
- 129 Sample and use a digital representation of said power signal for said averaging, calculating, applying and comparing
- 130 Let the first cycle represent the present cycle of said power signal and said second cycle represent a future cycle of said power signal
- 131 Let said adjustment factor comprise a fraction wherein either said first or second cycle averaging is the numerator and the other is the denominator
- 132 Let said second cycle be either a past or future cycle of said signal, said adjustment factor applied to said second cycle

NEW SHEET 2

FIG. 32

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Detect past, present and future cycles of a power supply signal

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Compare a region from a present cycle of said signal to a similar region in said past cycle and in said future cycle and make a determination as to which the present cycle would correlate better with for arc monitoring

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Adjust the amplitude of either said past or future cycles to adjust for amplitude decay or increase of said power supply signal

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Subtract the present cycle from either said past or future cycle to form an arc signal artifact waveform

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Analyze said arc signal artifact waveform to determine if an arcing condition exists

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Let the amplitude adjusting comprise calculating an adjustment factor based on the averaging of at least a portion of said present cycle and the averaging of at least a portion of either said past or future cycles

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Let the adjustment factor comprise a fraction having the averaging of said present cycle as the numerator and the averaging of either said past or future cycles as the denominator

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Generate an alarm if said analyzing said arc signal artifact waveform determines that a dangerous arcing condition exists